## CHAPTER III

## RESEARCH METHODOLOGY

## A. Research Design

The design of this research was experimental research. Dealing with the statement, Creswell (2012:294) stated that an experimental design was the traditional approach to conducting quantitative research. This type research was quasi-experimental research. According to Creswell (2012:309) also states that quasi experimental design is in which the researcher assigns participants to groups but not randomly. In this research, quasi-experimental designs had experimental group and control group. There were two kinds of test; pre-test and post-test. Pre-test was given before treatment and post-test was given in the last of treatment. Meanwhile the experimental class would be treated by using Reciprocal Questioning (Request) strategy but the control class was not.

Based on Cohen et al. (2007:276) the type of this research can be design as follows:

Table III. 1
Quasi-experimental Research

| Group | Pre-test | Treatment | Post-test |
| :---: | :---: | :---: | :---: |
| Experimental | $\mathrm{RO}_{1}$ | X | $\mathrm{O}_{2}$ |
| Control | $\mathrm{RO}_{3}$ | - | $\mathrm{O}_{4}$ |

Where :
$\mathrm{RO}_{1}=$ Pre-test to experimental group
$\mathrm{RO}_{3}=$ Pre-test to control group

X =Receive treatment by using Reciprocal Questioning (Request) Strategy
$\mathrm{O}_{2} \quad=$ Post-test experimental group
$\mathrm{O}_{4}=$ Post-test to control group

## 1. Location and Time of the research

The location of the research was at State Junior High School 10 Tapung Kampar Regency. This school was located in JL.Garuda Sakti Km. 07 Desa Karya Indah Kampar Regency. This research was conducted in April to May 2017.

## 2. Subject and Object of the research

The subject of this study was the eighth grade students of State Junior High School 10 Tapung Kampar Regency. The object of the research was Reciprocal Questioning (Request) strategy for reading comprehension of eighth grade students at State Junior High School 10 Tapung Kampar Regency.

## 3. The Population and Sample of the research

The population of this research was the eighth grade students at State Junior High School 10 Tapung Kampar Regency in 2016/2017 academic years. The total number of the eighth grade students of State Junior High School 10 Tapung Kampar Regency was 135 students.

Based on the research design of the research, the writer selected two classes to be taken as a sample. The writer took sample by using cluster random sampling. Based on the explanation above, the writer used lottery by passing out small rolled paper marked with sequence name of the class. Then after passing out the paper, the samples of this
research were VIIIA as experimental class and VIIIB as control class. Those were as the sample of the research by numbers 42 students; 21 students for control class and 21 students for experimental class.

TABLE III. 2
The Population and Sample of the Eighth Grade Students of State Junior High School 10 Tapung

| No | Classes | Number | Sample | Complement |
| :---: | :---: | :---: | :---: | :---: |
| 1 | VIII A | 21 | 21 Students | Sample (experiment class) |
| 2 | VIII B | 21 | 21 Students | Sample (control class) |
| 3 | VIII C | 24 | ---- | ---- |
| 4 | VIII D | 24 | ---- | ---------- |
| 5 | VIII E | 22 | --- | --- |
| 6 | VIII F | 23 | --- |  |
| Total |  | 135 <br> Students | 42 Students |  |

## 4. Techniques of Collecting Data

In this research, the writer used two technique for collecting data, it was observation and test. The kind of test that the writer used was multiple choices. The writer used twenty five (25) items to collect the data. Every multiple choice consisted of four answer options (a, b, c and d).

## 1. Observation

According Cohen (2007:396) observation as a research process is that it offers an investigator the opportunity to gather 'live' data from naturally occurring social situations. The writer used observation checklist and asked the English teacher of State Junior High School 10 Tapung as observer when the writer implement Reciprocal Questioning (Request) strategy.

## 2. Test

The test was conducted in two stages were pre- test and post- test. It had done by the writer itself.

TABLE III. 3
Blue Print of Reading Comprehension

| No | Indicator of Variable $\mathbf{Y}$ | Number of <br> Items | Items Number |
| :---: | :--- | :---: | :---: |
| 1 | The students can identify the main idea of the <br> narrative text. | 5 | $1,6,11,16,21$ |
| 2 | The students can identify the generic structure <br> of the narrative text. | 5 | $2,7,12,17,22$ |
| 3 | The students can identify language features of <br> the narrative text. | 5 | $3,8,13,18,23$ |
| 4 | The students can identify the reference of the <br> narrative text. | 5 | $4,9,14,19,24$ |
| 5 | The students can identify the meaning of <br> words of the narrative text. | 5 | $5,10,15,20,25$ |
| Total | 25 | 25 |  |

a. Pre-test

Pre-test would be used to collect the data about students' reading comprehension in narrative text before they were taught by using Reciprocal Questioning (Request) strategy. It was given to both experimental and control class. In this test, the writer used multiple choice type based on the indicators of reading comprehension.
b. Post-test

Post-test would be used to collect the data about students' reading comprehension in narrative text after they were taught by using Reciprocal Questioning (Request) strategy. It was given to both experimental and control class. In this test, the writer used
multiple choices type based on the indicators of reading comprehension.

After the students did the test, then the writer took the total score from the result of the reading comprehension test. Based on Arikunto (2009:245), the interpretation of the students score is classified follow:

TABLE III. 4
The Classification of Students Score

| The Level Score | Category |
| :---: | :---: |
| $80-100$ | Very Good |
| $66-79$ | Good |
| $56-65$ | Enough |
| $40-55$ | Poor |
| $30-39$ | Fail |

## 5. Validity and Reliability of the Test

## a. Validity of the Test

According to Fraenkel and Norman (2006:151) stated that the term of validity in the research refers to appropriateness, correctness, meaningfulness, and usefulness of the specific inferences researchers make based on the data they collect. Validity depends on the amount and type of evidence there is support the interpretation writers wish to make concerning data they have collected. There are three types of validity. They are content validity, criterion-related validity, and construct validity. In order to know the validity of reading comprehension test, the writer used content validity. Content validity is partly a matter of determining if the content that the instrument contains is an adequate sample of domain of content, it is supposed to represent.

Content validity refers to the content and format of the instrument. How appropriate the content or format is. Thus, the writer gave the test based on the material that was studied by the students. The material of the test was taken from the textbook.

According to Hughes (1989:26), a test said to be valid if it measures accurately what it is intended to measure:. The purpose of try out was to obtain validity and reliability of the test. It was determined by finding the difficulty level of each item. Historically, validity was defined as the extent to which an instrument measured what it claimed to measure.

The test given to students was considered not too difficult or too easy, often showing the low reliability. Item difficulty was determined as the proportion of correct responses. This is held pertinent to the index difficulty; it was generally expressed as the percentage of the students who answered the question correctly. According to Arikunto (2009:208), the formula of each item difficulty is as follows:

$$
p=\frac{B}{J S}
$$

Note:
P: Index of difficulty of facility
B: the number of correct answer
JS: the number of examiners of students
The formula above is used to find out easy or difficult test items that writer gives to the respondents. The items do not reach
the standard value of difficulty are modified. The standard value of the proportion of correct can be seen the table below:

Table III. 5
Index Difficulty Level of Instrument

| Proportion correct (p) | Item category |
| :---: | :---: |
| $\mathrm{P}>0.70$ | Easy |
| $0.30 \leq \mathrm{P} \leq 0.70$ | Average |
| $\mathrm{P}<0.30$ | Difficult |

The standard of index difficulty used is $<0.30$ and $>0.70$. it means that an item is accepted if the index difficulty is between 0.30-0.70 and is rejected if the index difficulty is less than 0.30 (the item is too difficult) and over than 0.70 (the item is too easy). The proportion of correct is represented by " p ", where as the poportion of incorrect is represented by " q ". The calculation of item difficulty can be seen from the following table:

TABLE III. 6
The Students' ability to identify the main idea in Narrative text

| Variable |  |  |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 6 | 11 | 16 | 21 |  |
|  | 12 | 8 | 10 | 13 | 13 | 24 |
|  | 0.50 | 0.33 | 0.42 | 0.54 | 0.54 |  |
|  | 0.50 | 0.67 | 0.58 | 0.46 | 0.46 |  |

Based on the table III. 6 the proportion of correct answer for item number 1 showed the proportion of correct 0.50 , item number 6 showed the proportion of correct 0.33 , item number 11 showed the proportion of correct 0.42 , item number 16 showed the proportion of correct 0.54 , item
number 21 showed the proportion of correct 0.54 . Based on the standard level of difficulty "p" $>0.30$ and $<0.70$, it was pointed out that item difficulties in average of each item number for identifying the main idea were accepted.

TABLE III. 7
The Students' ability to identify the Generic Structure in Narrative text

| Variable | Identifying the Generic Structure |  |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Item no | 2 | 7 | 12 | 17 | 22 |  |
| Correct | 15 | 13 | 11 | 12 | 11 | 24 |
| P | 0.63 | 0.54 | 0.46 | 0.50 | 0.46 |  |
| Q | 0.38 | 0.46 | 0.54 | 0.50 | 0.54 |  |

Based on the table III. 7 the proportion of correct answer for item number 2 showed the proportion of correct 0.63 , item number 7 showed the proportion of correct 0.54 , item number 12 showed the proportion of correct 0.46 , item number 17 showed the proportion of correct 0.50 , item number 22 showed the proportion of correct 0.46 . Based on the standard level of difficulty "p" $>0.30$ and $<0.70$, it was pointed out that item difficulties in average of each item number for identifying the generic structure were accepted.

TABLE III. 8
The Students' ability to identify the Language Features in Narrative text

| Variable | Identifying the Language Features |  |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 | 8 | 13 | 18 | 23 |  |
|  | 16 | 12 | 9 | 12 | 11 | 24 |
| P | 0.67 | 0.50 | 0.38 | 0.50 | 0.46 |  |
| Q | 0.33 | 0.50 | 0.63 | 0.50 | 0.54 |  |

Based on the table III. 8 the proportion of correct answer for item number 3 showed the proportion of correct 0.67 , item number 8 showed the proportion of correct 0.50 , item number 13 showed the proportion of correct 0.38 , item number 18 showed the proportion of correct 0.50 , item number 23 showed the proportion of correct 0.46 . Based on the standard level of difficulty "p" $>0.30$ and $<0.70$, it was pointed out that item difficulties in average of each item number for identifying the language features were accepted.

TABLE III. 9
The Students' ability to identify the Reference in Narrative text

| Variable |  |  |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 4 | 9 | 14 | 19 | 24 |  |
|  | 15 | 13 | 13 | 12 | 10 | 24 |
|  | 0.63 | 0.54 | 0.54 | 0.50 | 0.42 |  |
|  | 0.38 | 0.46 | 0.46 | 0.50 | 0.58 |  |

Based on the table III. 9 the proportion of correct answer for item number 4 showed the proportion of correct 0.63 , item number 9 showed the proportion of correct 0.54 , item number 14 showed the proportion of correct 0.54 , item number 19 showed the proportion of correct 0.50 , item number 24 showed the proportion of correct 0.42 . Based on the standard level of difficulty "p" $>0.30$ and $<0.70$, it was pointed out that item difficulties in average of each item number for identifying the reference were accepted.

## TABLE III. 10

The Students' ability to identify the Meaning of Words in Narrative text

| Variable | Identifying the Meaning of Words |  |  |  |  | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 5 | 10 | 15 | 20 | 25 |  |
|  | 14 | 11 | 13 | 13 | 10 | 24 |
|  | 0.58 | 0.46 | 0.54 | 0.54 | 0.42 |  |
|  | 0.42 | 0.54 | 0.46 | 0.46 | 0.58 |  |

Based on the table III. 10 the proportion of correct answer for item number 5 showed the proportion of correct 0.58 , item number 10 showed the proportion of correct 0.46 , item number 15 showed the proportion of correct 0.54 , item number 20 showed the proportion of correct 0.54 , item number 25 showed the proportion of correct 0.42 . Based on the standard level of difficulty "p" $>0.30$ and $<0.70$, it was pointed out that item difficulties in average of each item number for identifying the meaning of words were accepted.

## b. Reliability of the Test

Reliability has to do with accuracy of measurement. This kind of accuracy is reflected in obtaining of similar results when measurement is repeated on different occasions or with different instrument or by different persons. Pertaining to Gay and Airisian (2000:177), reliability is the degree to which a test consistently measure whatever it is measuring. In reference to Brown (2003:20), a reliable test is consistent and dependable. So reliability here is used to measure the quality of the test score and consistent of the test.

In reference to Arikunto (2009:75) the following table is category of reliability test used in determining the level of reliability of the test.

Table III. 11
The Level of Reliability

| No. | Reliability | Level of Reliability |
| :---: | :---: | :---: |
| 1. | $0.00-0.200$ | Very Low |
| 2. | $0.200-0.400$ | Low |
| 3. | $0.400-0.600$ | Sufficient |
| 4. | $0.600-0.800$ | High |
| 5. | $0.800-1.00$ | Very High |

To obtain the reliability of the test given, the researcher used SPSS 23 to find out whether the test was reliable or not.

TABLE III. 12
Reliability Statistics

| Cronbach's Alpha | N of Items |
| ---: | ---: |
| 0.793 |  |

From the table III. 12 above, it could be seen that the value of Cronbach's Alpha is 0.793 , from Arikunto level above, it could be said that reliability was accepted which was $0.600<0.793<0.800$ or higher than 0.600 and lower than 0.800 , it also could be stated that reliability was high.

## 6. The Homogeneity and Normality Test

## a. The Homogeneity of the Test

Homogeneity test is a test to identify whether the objects of the research (there or more samples) have the same variance. The method used in homogeneity test is the biggest variant compared to smallest variance. In this research, the writer used SPSS 23 to
assess the homogeneity of the data. The result of assessing the homogeneity can be seen as follows:

TABLE III. 13
Test of Homogeneity of Variances

| Levene Statistic | df1 | df2 | Sig. |
| :---: | :---: | :---: | :---: |
| 0.139 |  | 1 | 40 |

From the table III.13, it was known that the value of significance (sig.) was 0.711 . Data were homogenous or variant when the value Sig. was higher than 0.05 . Based on the table, it was clear that Sig. was higher than 0.05 which indicated the homogeneity of the data. The comparison could be stated as $0.711>0.05$.

## b. Normality of the Test

The technique of collecting data was using test. The data analyzed by using statistical analysis. In analyzing the data, the writer used scores of post-test of experimental and control classes. This score was analyzed statistically. In order to found the answer, the writer analyzed the data by using SPSS 23 as follows:

TABLE III. 14

| Tests of Normality |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Group | Kolmogorov-Smirnov ${ }^{\text {a }}$ |  |  | Shapiro-Wilk |  |  |
|  | Statistic | Df | Sig. | Statistic | Df | Sig. |
| Experiment | 0.179 | 21 | 0.077 | 0.911 | 21 | 0.057 |
| Control | 0.182 | 21 | 0.068 | 0.898 | 21 | 0.032 |
| a. Lilliefors | icance C | ction |  |  |  |  |

Based on the table above, it was obtained that the significant (Sig.) of post-test in Experimental group was 0.07. Then, the significant (Sig.) of post-test in control group was 0.06 . The data of this research were normal. It was measured by using Kolmogorov Smirnov table. It explained that the data were called normal if sig. $>0.05$. The data got from this research were normal.

## 7. Technique of Data Analysis

In analyzing the data, the writer used scores post-test of experimental and control groups. This score was analyzed statistically. In this research, the writer used these formulas:

## a. Independent sample t-test

According to Pallant (2010:239) an independent sample ttest was used when we want to compare the mean score on some continuous variable for two different groups. Hartono (2015:178), he said that to find out whether there is significant difference or there is no significant difference between two or more variables can be analyzed by using Independent sample ttest. In this research, the writer analyzed independent sample $t$ test by using SPSS 23 version.

The significant value was employed to see whether there is or not a significant difference among the mean scores both of experimental and control classes. Statistical hypothesis:
$\mathrm{H}_{0}=$ sig. (2-tailed) $>0.05$
$\mathrm{H}_{\mathrm{a}}=$ sig. (2-tailed) $<0.05$
1). $\mathrm{H}_{\mathrm{o}}$ is accepted if sig.(2-tailed) or there is no significant difference of using Reciprocal Questioning (Request) strategy on students' reading comprehension at eighth grade students of State Junior High School 10 Tapung Kampar Regency.
2). $\mathrm{H}_{\mathrm{a}}$ is accepted if sig.(2-tailed) or there is a significant difference of using Reciprocal Questioning (Request) strategy on students' reading comprehension at eighth grade students of State Junior High School 10 Tapung Kampar Regency.

## b. Effect Size

After finding the difference, the writer would find out the effect size of the phenomenon. Pallant (2010:242) stated that effect size statistics provides an indication of the magnitude of the differences between your groups (not just whether the difference could have occurred by chance). There are a number of different effect size statistic, the most common of which are eta squared. Eta squared can range from 0 to 1 and represents the proportion of variance in the dependent variable that is explained by the independent (group) variable.

The formula of eta squared is as follows:
$\eta^{2}=\frac{t^{2}}{t 2+(N 1+N 2-2)}$
Where:

| $\eta^{2}$ | $:$ eta squared |
| :--- | :--- |
| $t^{2}$ | $:$ to |
| N | $:$ number of students |

In order to interpret eta squared values, the guideline quoted from Cohen (1988) in Julie Pallant (2010:210) can be read as follows:

TABLE III. 15
Interpretation of Eta Squared for Effect Size

| No | Value | Effect |
| :---: | :---: | :---: |
| 1. | 0.01 | Small Effect |
| 2. | 0.06 | Moderate Effect |
| 3. | 0.14 | Large Effect |

*Adapted from Cohen (1988)

